

## Navy's M&V Planning Process

Darryl Matsui  
Naval Facilities Engineering Service Center  
Navy ESPC Team Lead  
Port Hueneme, CA

August 17-20, 2003

[www.energy2003.ee.doe.gov](http://www.energy2003.ee.doe.gov)

3

- Navy ESPC Team Approach to M&V
- Basics on M&V Plan content
- Example ECM M&V Approach
- M&V Plan Development Process
- Closing Suggestions to develop a successful M&V Plan

August 17-20, 2003

[www.energy2003.ee.doe.gov](http://www.energy2003.ee.doe.gov)

2

### Advantages to Team Approach

- ESPC program centrally tasked
  - Dedicated and specialized Contracting Officers and Project Facilitators
- NAVFAC In-house technical staff
- Access to technical laboratories
- Training assistance
- Understand importance of balancing the M&V approach and costs with project objectives and savings

August 17-20, 2003

[www.energy2003.ee.doe.gov](http://www.energy2003.ee.doe.gov)

3

- General
  - In accordance with specific contract requirements (I.e., DOE Super ESPC, Army 46 State, etc.)
  - Applicable Industry Protocols and Guidance
- Format based on
  - Specific contract - Format outline (Now)
  - FEMP M&V Workgroup Developments (Future)
    - FEMP M&V Plan Template (Draft)

August 17-20, 2003

[www.energy2003.ee.doe.gov](http://www.energy2003.ee.doe.gov)

4

### • Sample of M&V Plan contents

- Project Level
  - Description, M&V overview, total savings and costs, responsibility matrix, schedule, annual M&V report details, etc.
- ECM Specific
  - Description, M&V objectives, data gathering parameters, baseline and post installation M&V details, determination of savings, etc.

August 17-20, 2003

[www.energy2003.ee.doe.gov](http://www.energy2003.ee.doe.gov)

5

- Lighting ECM's
  - Low risk
  - Use stipulated or stipulated/spot measurement approach (Option A)
- Central Plants or large HVAC Systems
  - Increased performance risk
  - Approach used may depend on multiple factors:
    - Availability of existing/installed controls (Option B)
    - Availability of isolated utility meters (Option C)
    - Simulation Software options (Option D)
    - Combination of all options

August 17-20, 2003

[www.energy2003.ee.doe.gov](http://www.energy2003.ee.doe.gov)

6

## M&V Plan Development

- Continuous Process
- Begins at initial DO kickoff meeting
- Co-developed Plan - communication essential
- The M&V Plan bottom line
  - Must meet ESPC M&V requirements
  - Ensures the agency is comfortable with the developed baseline and with M&V cost/uncertainty tradeoffs
  - Result in a custom, site specific plan that both the ESCO and the Agency agree upon.

August 17-20, 2003

[www.energy2003.ee.doe.gov](http://www.energy2003.ee.doe.gov)

7

## Closing Suggestions

- If new to ESPC, attend M&V Training
- Spend equal time and effort determining and evaluating baseline energy usage as you do on the post award M&V approach.
- Use rules of thumb to determine if M&V costs are reasonable (I.e., FEMP M&V Guidelines v2.2)
- Co-develop the M&V plan - there should be no surprises and unknowns
- Balance risk, M&V cost, end user and ESCO concerns - The M&V plan should be mutually accepted.
- Make sure roles and responsibilities are clearly defined in the M&V Plan - Don't assume when it's too late.
- Keep the end user of the M&V Annual Reports in mind (I.e., 15 years from now)
- Communicate often

August 17-20, 2003

[www.energy2003.ee.doe.gov](http://www.energy2003.ee.doe.gov)

8

## ~~An Energy Efficiency Workshop and Exposition~~ Orlando, Florida

*Please be courteous to our speakers*



*Turn off all cell phones  
and  
Set pagers to vibrate*



August 17-20, 2003

[www.energy2003.ee.doe.gov](http://www.energy2003.ee.doe.gov)

9